

Docket No. 0600-1031  
Appln. No. 10/030,002

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JUN 30 2008

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions,  
and listings, of claims in the application:

LISTING OF CLAIMS:

1-18. (canceled)

19. (previously presented) A process for manufacture of soluble branched polymers of glucose essentially containing no  $\beta$ -glucosidic bonds, wherein:

a) an aqueous solution of starch or of starch derivative of dry matter of 1 to 50% by weight, is subjected to a temperature greater than 130°C, under a pressure of more than 3.5 bars, for 2 to 5 mins,

b) the starch or starch derivative thus obtained is treated with 50 to 2,000 units of purified branching enzyme at a temperature lying between 25 and 50°C for a duration from 10 mins to 24 hrs; and

c) the branched polymers of glucose thus obtained are collected.

20. (previously presented) The process for manufacture of soluble branched polymers of glucose essentially containing no  $\beta$ -glucosidic bonds according to Claim 19, wherein:

Docket No. 0600-1031  
Appln. No. 10/030,002

a) an aqueous solution of starch or of starch derivative of dry matter of 1 to 50% by weight is subjected to a temperature lying between 140 and 150°C, under a pressure lying between 4 and 5 bars, for 2 to 5 mins,

b) the starch or starch derivative thus obtained is treated with 50 to 2,000 units of purified branching enzyme at a temperature of 30°C, for a duration from 10 mins to 24 hrs, and

c) the branched polymers of glucose thus obtained are collected.

**21. (previously presented)** The process for manufacture of soluble branched polymers of glucose according to Claim 19, wherein the branching enzyme is selected from the group consisting of glycogen branching enzymes, starch branching enzymes and any mixtures of these enzymes.

**22. (previously presented)** The process for manufacture of soluble branched polymers of glucose according to Claim 19, wherein the branching enzyme is extracted from organisms and/or from microorganisms selected from the group consisting of higher plants, yeasts, bacteria and unicellular algae.

**23. (previously presented)** The process for manufacture of soluble branched polymers of glucose according to Claim 19, wherein the branching enzyme is extracted unicellular algae.

Docket No. 0600-1031  
Appln. No. 10/030,002

24. (previously presented) The process for manufacture of soluble branched polymers of glucose according to Claim 23, wherein the branching enzyme extracted from algae is obtained by isolation from a genetically modified organism capable of expressing the said enzyme.

25-30. (canceled)

31. (previously presented) Soluble branched polymers of glucose containing essentially no  $\beta$ -glucosidic bonds and having:

- between 2.5 and 10% of  $\alpha$ -1, 6 glucosidic bonds,
  - a very low or zero tendency to retrograde in aqueous solution, determined according to a test A,
  - a Mw determined according to a test C at a median value of the molecular weight distribution profile lying between  $10^4$  and  $10^8$  daltons, and
  - a reducing sugar content of at most 9%;
- said polymers being in isolated and purified form.

32. (previously presented) The soluble branched polymers of glucose according to claim 31, wherein said soluble branched polymers of glucose have between 2.5 and 5% of  $\alpha$ -1, 6 glucosidic bonds.

Docket No. 0600-1031  
Appln. No. 10/030,002

33. (previously presented) The soluble branched polymers of glucose according to claim 31, wherein said soluble branched polymers of glucose have a reducing sugar content of at most 1%.

34. (previously presented) Soluble branched polymers of glucose containing essentially no  $\beta$ -glucosidic bonds obtained according to the process of claim 31, having:

- between 2.5 and 10% of  $\alpha$ -1, 6 glucosidic bonds,
- a very low or zero tendency to retrograde in aqueous solution, determined according to test A,
- a Mw determined according to a test C at a median value of the molecular weight distribution profile lying between  $10^4$  and  $10^8$  daltons, and
- a reducing sugar content of at most 9%.

35. (previously presented) Soluble branched polymers of glucose according to claim 31, having a viscosity determined according to a test B of at most 5,000 cP.

36. (previously presented) Soluble branched polymers of glucose according to claim 31, having:

- between 2.5 and 5% of  $\alpha$ -1, 6 glucosidic bonds,

Docket No. 0600-1031  
Appln. No. 10/030,002

- a Mw determined according to a test C at a median value of the molecular weight distribution profile lying between  $10^5$  and  $10^6$  daltons, and
- a reducing sugar content of at most 1%.

37. (previously presented) Soluble branched polymers of glucose according to claim 31, having:

- between 5 and 10% of  $\alpha$ -1, 6 glucosidic bonds,
- a Mw determined according to a test C at a median value of the molecular weight distribution profile lying between  $10^7$  and  $10^8$  daltons, and
- a reducing sugar content of at most 1%.

38. (new) A process for manufacture of soluble branched polymers of glucose essentially containing no  $\beta$ -glucosidic bonds, wherein:

a) an aqueous solution of starch or of starch derivative of dry matter of 1 to 50% by weight, is subjected to a temperature greater than  $130^\circ\text{C}$ , under a pressure of more than 3.5 bars, for 2 to 5 mins,

b) the starch or starch derivative thus obtained is treated with 50 to 2,000 units of purified branching enzyme at a temperature lying between  $25$  and  $50^\circ\text{C}$  for a duration from 10 mins to 24 hrs, wherein the purified branching enzyme is one selected from the group consisting of the branching enzyme of *E. coli*, the

Docket No. 0600-1031  
Appln. No. 10/030,002

branching enzyme of *C. reinhardtii* and the branching enzyme of  
maize, and

c) the branched polymers of glucose thus obtained are  
collected.